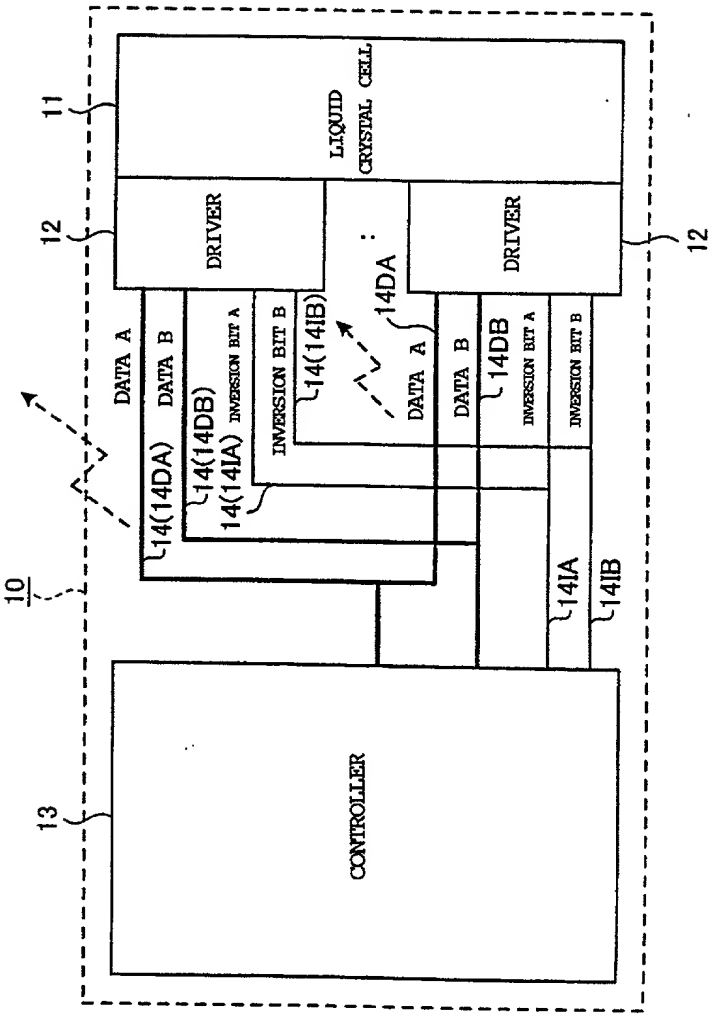
FIG. 1



Patent Application

FIG. 2

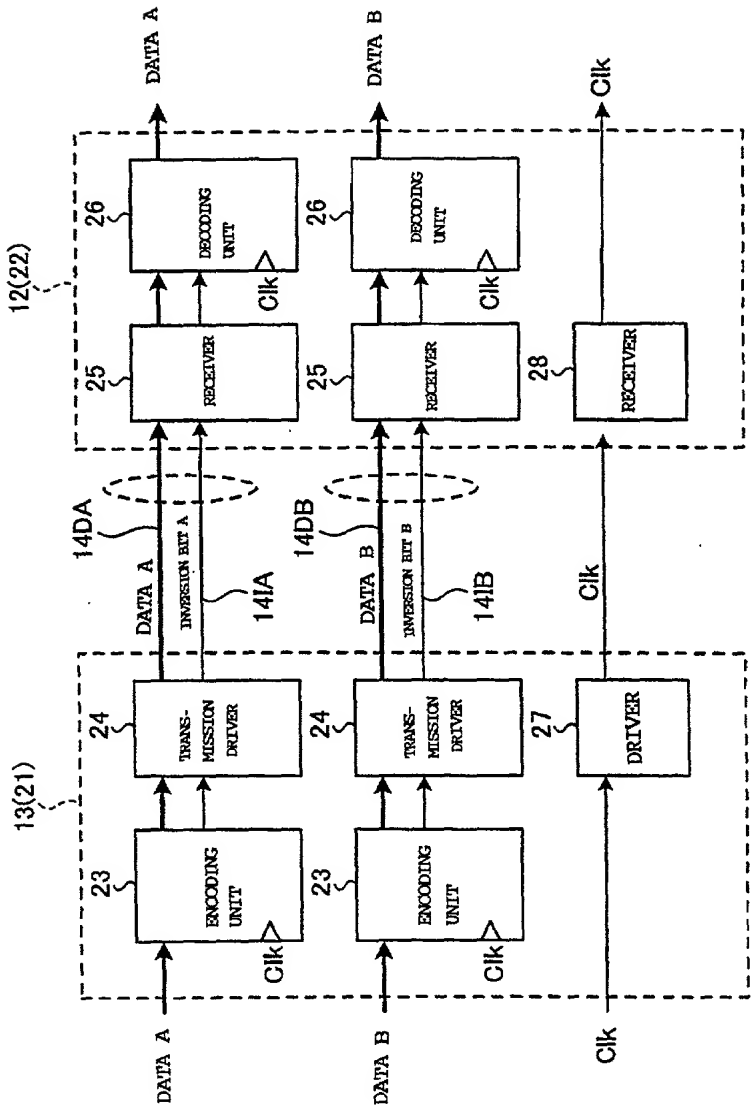

DATA A
DATA B
Clk
12(22)
26
DECODING UNIT
25
RECEIVER
28
14DA
14DB
DATA A
INVERSION BIT A
141A
DATA B
INVERSION BIT B
141B
13(21)
24
TRANS-MISSION DRIVER
27
DRIVER
23
ENCODING UNIT

FIG. 3

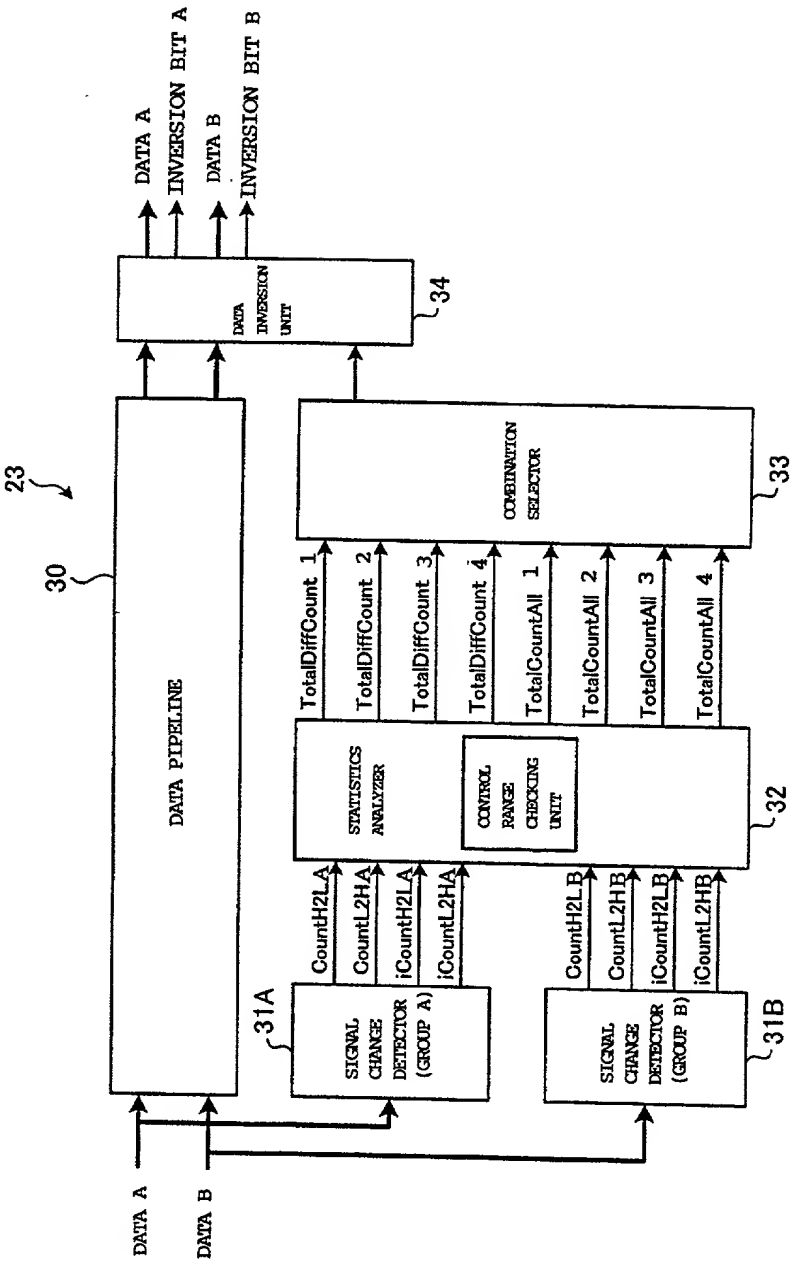


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FIG. 4

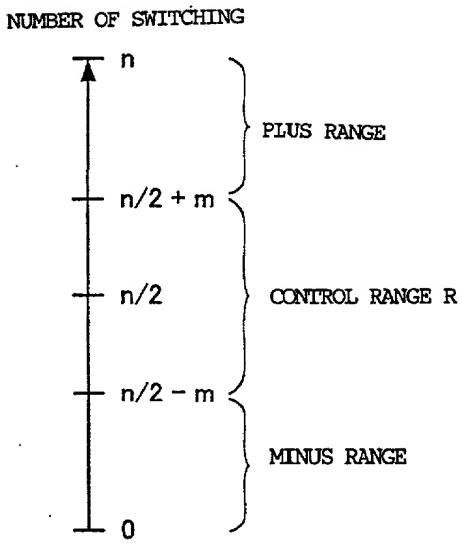

NUMBER OF SWITCHING
n
n/2 + m
n/2
n/2 - m
0
PLUS RANGE
CONTROL RANGE R
MINUS RANGE

FIG. 5

GROUP A	GROUP B	PROCESSING
IN RANGE	IN RANGE	⇨ [I]
OUT OF RANGE	OUT OF RANGE	⇨ [II]
IN RANGE	OUT OF RANGE	⇨ [III]
OUT OF RANGE	IN RANGE	⇨ [III]

09686474.050504

COMBINATION	GROUP A		GROUP B	
1	Normal	CountH2LA, CountL2HA	Normal	CountH2LB, CountL2HB
2	Normal	CountH2LA, CountL2HA	Inv	iCountH2LB, iCountL2HB
3	Inv	iCountH2LA, iCountL2HA	Normal	CountH2LB, CountL2HB
4	Inv	iCountH2LA, iCountL2HA	Inv	iCountH2LB, iCountL2HB

FIG. 6

TOSHIBA TFS28960

COMBINATION	TotalDiffCount	TotalCountAll
1	DiffCountA + DiffCountB	CountH2LA + CountL2HA + CountH2LB + CountL2HB
2	DiffCountA + iDiffCountB	CountH2LA + CountL2HA + iCountH2LB + iCountL2HB
3	iDiffCountA + DiffCountB	iCountH2LA + iCountL2HA + CountH2LB + CountL2HB
4	iDiffCountA + iDiffCountB	iCountH2LA + iCountL2HA + iCountH2LB + iCountL2HB

FIG. 7

<case1>

A

	GROUP A	GROUP B	AB Total
CountH2L	7	1	8
CountL2H	6	12	18
iCountH2L	3	10	13
iCountL2H	8	1	9

B

1

GROUP A (Normal)	GROUP B (Normal)	AB Total	
7	1	8	(D)
6	12	18	(E)
1	-11	-10	
(A)	(B)	(C)	

2

GROUP A (Normal)	GROUP B (Inv)	AB Total	
7	10	17	(D)
6	1	7	(E)
1	9	10	
(A)	(B)	(C)	

3

GROUP A (Inv)	GROUP B (Normal)	AB Total	
3	1	4	(D)
8	12	20	(E)
-5	-11	-16	
(A)	(B)	(C)	

4

GROUP A (Inv)	GROUP B (Inv)	AB Total	
3	10	13	(D)
8	1	9	(E)
-5	9	4	
(A)	(B)	(C)	

FIG. 8

<case2>

A

	GROUP A	GROUP B	AB Total
CountH2L	7	1	8
CountL2H	6	12	18
iCountH2L	3	6	9
iCountL2H	8	5	13

B

1

GROUP A (Normal)	GROUP B (Normal)	AB Total	
7	1	8	(D)
6	12	18	(E)
1	-11	-10	
(A)	(B)	(C)	

2

GROUP A (Normal)	GROUP B (Inv)	AB Total	
7	6	13	(D)
6	5	11	(E)
1	1	2	
(A)	(B)	(C)	

3

GROUP A (Inv)	GROUP B (Normal)	AB Total	
3	1	4	(D)
8	12	20	(E)
-5	-1	-16	
(A)	(B)	(C)	

4

GROUP A (Inv)	GROUP B (Inv)	AB Total	
3	6	9	(D)
8	5	13	(E)
-5	1	-4	
(A)	(B)	(C)	

FIG. 9

<case3>

A

	GROUP A	GROUP B	AB Total
CountH2L	7	1	8
CountL2H	6	12	18
iCountH2L	10	6	16
iCountL2H	1	5	6

B

1

GROUP A (Normal)	GROUP B (Normal)	AB Total	
7	1	8	(D)
6	12	18	(E)
1	-11	-10	
(A)	(B)	(C)	

2

GROUP A (Normal)	GROUP B (Inv)	AB Total	
7	6	13	(D)
6	5	11	(E)
1	1	2	
(A)	(B)	(C)	

3

GROUP A (Inv)	GROUP B (Normal)	AB Total	
10	1	11	(D)
1	12	13	(E)
9	-11	-2	
(A)	(B)	(C)	

4

GROUP A (Inv)	GROUP B (Inv)	AB Total	
10	6	16	(D)
1	5	6	(E)
9	1	10	
(A)	(B)	(C)	

FIG. 10

<case4>

A

	GROUP A	GROUP B	AB Total
CountH2L	7	6	13
CountL2H	6	7	13
iCountH2L	10	6	16
iCountL2H	1	5	6

B

1

GROUP A (Normal)	GROUP B (Normal)	AB Total	
7	6	13	(D)
6	7	13	(E)
1	-1	0	
(A)	(B)	(C)	

2

GROUP A (Normal)	GROUP B (Inv)	AB Total	
7	6	13	(D)
6	5	11	(E)
1	1	2	
(A)	(B)	(C)	

3

GROUP A (Inv)	GROUP B (Normal)	AB Total	
10	6	16	(D)
1	7	8	(E)
9	-1	8	
(A)	(B)	(C)	

4

GROUP A (Inv)	GROUP B (Inv)	AB Total	
10	6	16	(D)
1	5	6	(E)
9	1	10	
(A)	(B)	(C)	

FIG. 11

<case5>

A

	GROUP A	GROUP B	AB Total
CountH2L	7	7	14
CountL2H	3	3	6
iCountH2L	7	7	14
iCountL2H	7	7	14

B

1

GROUP A (Normal)	GROUP B (Normal)	AB Total	
7	7	14	(D)
3	3	6	(E)
4	4	8	
(A)	(B)	(C)	

2

GROUP A (Normal)	GROUP B (Inv)	AB Total	
7	7	14	(D)
3	7	10	(E)
4	0	4	
(A)	(B)	(C)	

3

GROUP A (Inv)	GROUP B (Normal)	AB Total	
7	7	14	(D)
7	3	10	(E)
0	4	4	
(A)	(B)	(C)	

4

GROUP A (Inv)	GROUP B (Inv)	AB Total	
7	7	14	(D)
7	7	14	(E)
0	0	0	
(A)	(B)	(C)	

FIG. 12

<case6>

A

	GROUP A	GROUP B	AB Total
CountH2L	7	7	14
CountL2H	7	3	10
iCountH2L	9	5	14
iCountL2H	5	9	14

B

1

GROUP A (Normal)	GROUP B (Normal)	AB Total	
7	7	14	(D)
7	3	10	(E)
0	4	4	
(A)	(B)	(C)	

2

GROUP A (Normal)	GROUP B (Inv)	AB Total	
7	5	12	(D)
7	9	16	(E)
0	-4	-4	
(A)	(B)	(C)	

3

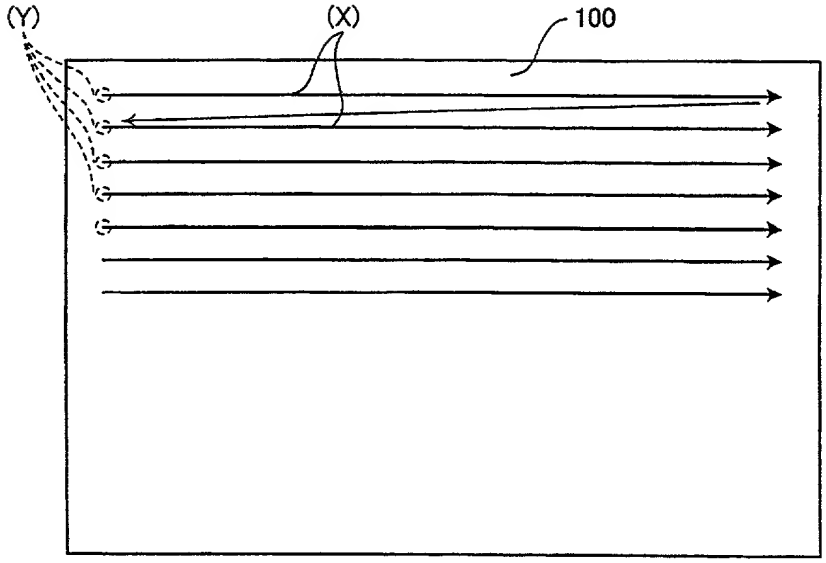
GROUP A (Inv)	GROUP B (Normal)	AB Total	
9	7	16	(D)
5	3	8	(E)
4	4	8	
(A)	(B)	(C)	

4

GROUP A (Inv)	GROUP B (Inv)	AB Total	
9	5	14	(D)
5	9	14	(E)
4	-4	0	
(A)	(B)	(C)	

FIG. 13

FIG. 14



		Group 1	Group 2	・・・	Group i
A	Normal	CountH2L(1)	CountH2L(2)	・・・	CountH2L(j)
		CountL2H(1)	CountL2H(2)	・・・	CountL2H(j)
	Inverted	iCountH2L(1)	iCountH2L(2)	・・・	iCountH2L(j)
		iCountL2H(1)	iCountL2H(2)		iCountL2H(j)

B DiffCount(j) = CountH2L(j) - CountL2H(j)
iDiffCount(j) = iCountH2L(j) - iCountL2H(j)

C TotalDiffCount(k) = ?DiffCount(1) + ?DiffCount(2) + ・・・・ + ?DiffCount(n)

D TotalCountAll(k) = ?CountH2L(1) + ?CountL2H(1)
+ ?CountH2L(2) + ?CountL2H(2)
+ ・・・
+ ?CountH2L(n) + ?CountL2H(n)

where ? is blank or "i".

FIG. 15